Utah's Broadband Mapping, Analysis, and Planning Project Program Narrative

A Project Proposal for the National Telecommunications and Information Administration State Broadband Data and Development Grant Program

CFDA # 11.558
Opportunity #0660-ZA29

Prepared By: The Utah Broadband Mapping, Analysis, and Planning Project Team
Utah Public Service Commission (Designated Eligible Entity)
Utah Department of Technology Services – Automated Geographic Reference Center
Utah Department of Technology Services – Network Planning Department

Date of Application: 8/13/2009

Version: Final

Table of Contents

National Telecommunications and Information Administration
State Broadband Data and Development Grant Program
Opportunity #0660-ZA29

Utah Broadband Mapping, Analysis, and Planning Project Program Narrative

Applicant: **Utah Public Service Commission**
60 East 300 South, Fourth Floor
Salt Lake City, Utah 84111
801-530-6713

Date:	August 13, 2009
Funding Request:	$2,925,555
In-Kind Match:	$ 739,000
Total Project Cost:	$3,664,555
Project Period:	October 1, 2010 – September 30, 2014
Organization type:	State Government Agency

Points of Contact:

Carol Revelt	John Harvey	Julie Orchard
Utility Technical Consultant	Telecom Tech. Consultant	Commission Administrator
801-530-68711	801-530-6781	801-530-6716
crevelt@utah.gov	jsharvey@utah.gov	jorchard@utah.gov

Project Name: Utah Broadband Mapping, Analysis, and Planning Project (UBMAPP)

EXECUTIVE SUMMARY

Through this application, the Public Service Commission of Utah (PSC) is requesting a federal grant of $2,925,555 to develop and implement a project to fulfill the broadband mapping and planning objectives of the National Telecommunications and Information Administration's (NTIA) State Broadband Data and Development Grant Program. Associated with this federal grant, the state of Utah will provide an in-kind match of $739,000 for a total project amount of $3,664,555.

The goals of the project encompassed by this grant application are threefold: 1) To collect, maintain, verify, and update broadband mapping data, in accordance with the NTIA NOFA definition of broadband based on up/down stream speeds) which will be provided to the NTIA in accordance with the requirements of the Notice of Funding Announcement (NOFA) 0660-ZA29 and associated amendments;[1] 2) to develop publicly accessible state broadband maps and web mapping applications which will provide a spatial distribution of aggregate-level, non-confidential information on broadband access and availability; and 3) to develop a planning framework to assess and expand accessibility to broadband infrastructure and services. The project will be completed through a collaborative effort led by the PSC and the Network Planning Group and the Automated Geographic Reference Center (AGRC) of the Utah Department of Technology Services (collectively known as the Project Team). The results of

[1] See: Federal Register/Vol.74, No. 129/Wednesday, July 8, 2009/Notices and associated amendments

this project will be used to determine economic and planning objectives and, among other things, support economic development, education, and health/safety goals.

According to the U.S. Census Bureau's "Current Population Survey, November 2007" released on the internet in June 2009[2], in Utah 74.8 percent of individuals live in households with Internet Access. Due to the economic realities and the rural/undeveloped nature of the state outside of the major population centers, it is certain that unserved and underserved broadband areas exist within Utah. To date, however, no map of these areas exists at the state level.

With respect to prioritization for the allocation of broadband grant funds in Utah, since a listing of eligible broadband projects within Utah identified under the NTIA's Broadband Technology Opportunities Program (BTOP) will not be received prior to the submission of this grant application, a prioritization for the allocation of these grant funds for all projects in or affecting Utah, cannot yet be provided. Although the BTOP-qualifying projects are not yet known, criteria for evaluation and prioritization of proposed broadband projects will reflect the BTOP objectives of providing access or providing improved access to broadband service to consumers residing in either unserved and underserved areas in Utah; providing broadband access, education, awareness, training, equipment, and support to community anchor institutions or organizations and agencies serving vulnerable populations, or job-creating strategic facilities located in state- or federally-designated economic development areas; improving access to, and use of broadband service by public safety agencies; and stimulating the demand for broadband, economic growth and job creation.

As with previously-implemented broadband-funding programs in Utah, evaluation criteria will include the financial and technological feasibility of a project; an assessment of the number of people who would be impacted in unserved areas or receive improved service levels in underserved areas in the most efficient and cost-effective manner; an assessment of the benefits of projects related to broadband access, education, training, support of community anchor institution, and public safety; and an evaluation of why a specific project meets the greatest needs of Utah in terms of the objectives of BTOP.

To be effective, broadband mapping efforts need to be accurate, credible, focused, and repeatable and to balance sufficient granularity with visual aesthetics to convey characteristics at the margins of broadband service areas to both professional and lay audiences. As specified in the NOFA, the following enumerated sections address the five broadband mapping and planning review criteria.

2. Project Feasibility

2.(a) Applicant Capabilities – Budget Narrative

Through this application, the PSC is requesting a federal grant of $2,925,555 to develop and implement a project to fulfill the broadband mapping and planning objectives of the NTIA State Broadband Data and Development Grant Program. Associated with this federal grant, the state of Utah will provide an in-kind match of $739,000 for a total project amount of $3,664,555. The $2,925,555 federal grant includes a request for $500,000 for planning activities with the remaining $2,425,555 being dedicated to mapping activities and overall project management. This grant application assumes external non-government contractors will be necessary to complete various tasks associated with the project. External non-government contractors for mapping activities will be solicited through a competitive RFP process. The estimated contractor costs in this proposal are based on responses received from a Request for Information on Broadband Data and Mapping, which was issued by the State Purchasing Department in July, 2009, and from information the Project Team has received from other states. In the event the responses to the RFP vary materially from this project estimate, a representative of the Project Team will notify NTIA.

Three separate budget spreadsheets are provided below as follows: combined mapping, analysis, and planning project budget (page 19), a separate mapping and analysis project budget (page 20), and a separate planning project budget (page 21). To access each spreadsheet simply double click on the spreadsheet to open Microsoft Excel. The Broadband Planning Project Budget Narrative begins on page 22.

Broadband Mapping Budget Narrative: For the broadband mapping project the PSC will contract with both private contractors and other state agencies and local governments in a manner which maximizes the successful delivery of products for both the immediate requirements and the five-year continuous maintenance of the products. A budget spreadsheet is located at the end of the Broadband Mapping budget narrative.

1) Private Contractors- Estimated cost: $1,450,000
These estimates may vary based on the contracts negotiated with the vendors.

- RFP for NDA and Data Acquisition. The State has begun the process of developing the requirements for a Request for Proposal (RFP) for the purpose of identifying all broadband providers in Utah, executing non-disclosure agreements with these providers and acquiring the data necessary to depict and characterize the available broadband services in Utah and verification of wireless broadband. Estimate based on information derived from RFI.
  Estimated contract cost: $1,350,000
- State Broadband Portal. The State will also develop a portal for public access to information about broadband services in Utah to incorporate as part of the Utah's web site, utah.gov. It is proposed to contract with Utah Interactive, Inc., a private contractor which developed and maintains the Utah.gov web site, for the broadband portal. Estimated based on programming costs for anticipated functionality.
  Estimated contract cost: $100,000

2) State agency and local government – Estimated budget (excluding in-kind match) : $961,000:
Broadband Mapping. The state of Utah has already invested significant dollars in an enterprise geospatial infrastructure that provides technical expertise, data and the means for delivery of sophisticated interactive mapping. The AGRC is the state agency that developed and maintains this infrastructure. It is proposed that the AGRC be responsible for the analysis of the data delivered by the contractors, the delivery of the required data to the NTIA, development of the community anchor institutions data, and the development of the public interactive maps to both assist in the gathering of verification data and to provide for display of broadband map products.

- Verification. The accuracy and verification of the information will be addressed by the AGRC in collaboration with county government and tribal organizations by enhancing the state's existing address and street centerline database. As part of the proposed verification process, these agencies will also collaborate with other state entities as the Utah League of Cities and Towns, Utah Education Network, the Utah CIO's office, the DTS-Telecommunications Section.
  Estimated cost AGRC: $561,000 based on staff estimated total hours 7,685 hr over the 5 year project at a rate of $73/hour which is established in Utah State Statute as the rate for professional GIS services.

Estimated contract cost with 29 Utah counties: $400,000 – AGRC will work with counties to evaluate and locate all unmatched addresses to both produce new address points, and, concurrently, improve their street centerline-based address range datasets. AGRC will contract with counties for GIS services for: 1) local data improvement of address data, 2) developing an update process to transfer improvements into the statewide datasets, and 3) implementing the update process in subsequent years.

3) ARRA Accounting and Reporting – Estimated budget: $14,555
This grant, if awarded, will contain many American Reinvestment and Recovery Act ("ARRA") grant conditions requiring additional tracking, auditing, and reporting of funds above and beyond the standard accounting practices of the State. Federal representatives have communicated to Utah that 0.5 percent of the grant amount should be added to the grant application to account for various ARRA audit and reporting requirements.

4) In-kind Contribution for Broadband Mapping and Project Management -- Minimum contribution total: $639,000
The in-kind contribution for Utah will be based on a combination of resources: Allocation of state staff resources of the PSC, Policy Advisory Committee members' time, computer hardware and geospatial software, and data from the SGID.

- The PSC will provide staff resources for project management, project reporting, and contract management. The in-kind contribution ($60,000) is based on a total of 1,053 staff hours at a rate of $56.98/hour which includes salary and benefits.
- Members of the Advisory Committee will serve without compensation and their time will be contributed as in-kind support.
- The enterprise geospatial infrastructure that includes servers, database software, geospatial software for both desktop analysis and web application development and deployment that will be used for analysis and mapping and deployment of an interactive map. (In-kind $46,100) The in-kind cost is based on actual software maintenance costs that will be incurred for the GIS software that will be used by AGRC staff throughout the project.
- Use of other statewide data layers that are critical to the analysis and presentation of the broadband information. (In-kind $511,000)

  Data layers and estimated value: High resolution aerial photography (2009) will be available October. 1, 2009 and will be invaluable for locating addresses. The State's cost share for this acquisition is $211,000. As this is newly acquired data, the State's portion of the overall acquisition cost is used to estimate value. However, the overall cost of this project is about $500,000. It will be used to verify parcels and parcel addresses. Over the past 5 years the State has invested $1.5 million in building accurate roads data and address data as part of the effort to support the E911 program. This data represents the most current and accurate address range and streets data available. The planned cost for enhancing and updating this data for FY10 is $300,000 which we propose is a good estimate of the in-kind value for this data, although this figure is likely to be much higher as a similar funding level is anticipated for the subsequent four years of the grant period.

Utah Broadband Mapping, Analysis and Planning Project Budget
Based on a Fiscal Year of October 1 through September 30

		Year 1		Year 2		Year 3		Year 4		Year 5	
Activity	**Project Task**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**
Map	Non-disclosure Agreements & Broadband Data Acquisiton	$950,000									
Map	Broadband Data Accuracy & Verification and Analysis	$486,000	$499,000	$150,000							
Map	Community Anchor Institutions Data	$100,000									
Map	Presentation of Data for Public Access	$225,000									
Map	Semi-annual Data & Mapping Updating			$125,000	$20,000	$125,000	$20,000	$125,000	$20,000	$125,000	$20,000
Map	Project Management and Reporting		$20,000		$10,000		$10,000		$10,000		$10,000
Plan	Broadband Planning Project	$100,000	$20,000	$100,000	$20,000	$100,000	$20,000	$100,000	$20,000	$100,000	$20,000
	Sub Total without additional ARRA Grant Requirements	**$1,861,000**	**$539,000**	**$375,000**	**$50,000**	**$225,000**	**$50,000**	**$225,000**	**$50,000**	**$225,000**	**$50,000**
	ARRA Specific Accounting and Reporting	$2,911		$2,911		$2,911		$2,911		$2,911	
	Yearly Totals	**$1,863,911**	**$539,000**	**$377,911**	**$50,000**	**$227,911**	**$50,000**	**$227,911**	**$50,000**	**$227,911**	**$50,000**

Summary	**Federal Grant**	**Estimated State In-Kind Match**	**Project Total**
Broadband Mapping	$2,425,555	$639,000	
Broadband Planning	$500,000	$100,000	
Total	**$2,925,555**	**$739,000**	**$3,664,555**

Utah Broadband Mapping and Analysis Project Budget
Based on a Fiscal Year of October 1 through September 30

		Year 1		Year 2		Year 3		Year 4		Year 5	
Activity	**Project Task**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**	**Federal Grant**	**Estimated State In-Kind Match**
Map	Non-disclosure Agreements & Broadband Data Acquisiton	$950,000									
Map	Broadband Data Accuracy & Verification and Analysis	$486,000	$499,000	$150,000							
Map	Community Anchor Institutions Data	$100,000									
Map	Presentation of Data for Public Access	$225,000									
Map	Semi-annual Data & Mapping Updating			$125,000	$20,000	$125,000	$20,000	$125,000	$20,000	$125,000	$20,000
Map	Project Management and Reporting		$20,000		$10,000		$10,000		$10,000		$10,000
	Sub Total without additional ARRA Grant Requirements	**$1,761,000**	**$519,000**	**$275,000**	**$30,000**	**$125,000**	**$30,000**	**$125,000**	**$30,000**	**$125,000**	**$30,000**
	ARRA Specific Accounting and Reporting	$2,911		$2,911		$2,911		$2,911		$2,911	
	Yearly Totals	**$1,763,911**	**$519,000**	**$277,911**	**$30,000**	**$127,911**	**$30,000**	**$127,911**	**$30,000**	**$127,911**	**$30,000**

Summary	**Federal Grant**	**Estimated State In-Kind Match**	**Project Total**
Broadband Mapping	$2,425,555	$639,000	
Total	**$2,425,555**	**$639,000**	**$3,064,555**

2.(b) Applicant Capacity, Knowledge and Experience
In order to ensure the successful achievement of the goals of this grant application the state of Utah has formed a collaborative Project Team to manage the overall project, develop and implement the broadband mapping project, develop the statewide planning project for broadband adoption in unserved and underserved areas of the State, and ensure collaboration with various stakeholder groups and transparency of the project. These agencies are the PSC and the Network Planning group and the AGRC, both of the DTS. Their skills, experience, and responsibilities for the project are outlined below.

Utah Public Service Commission: The general role of the PSC is to ensure safe, reliable, adequate, and reasonably priced utility service. It conducts hearings and investigations of utility company operations in order to determine just and reasonable rates for service. The PSC strives to protect efficient, reliable, reasonably-priced utility service for customers, and to maintain financially healthy utility companies. With respect to telecommunications companies, these goals are attained through the regulatory decisions the PSC makes in accordance with Utah Code 54-8b – Public Telecommunications Law and through rules the PSC adopts. The PSC frequently interacts with representatives of the telecommunications industry such as Quest and rural telecommunications companies frequently represented by Utah Rural Telecommunications Association.

The Governor of Utah has designated the PSC as the eligible entity to receive grant funding for the purpose of developing and implementing the broadband mapping project and planning projects. As such the PSC has been designated as the overall project manager. For the purposes of the broadband mapping and planning grant, the PSC's responsibility is to ensure a timely and complete grant application submission, grant receipt and management, and compliance with all grant requirements and stipulations contained therein. Key PSC staff members assigned to this project include:

John Harvey, Ph.D., Telecommunications and Energy Technical Consultant: 11 years experience in utility-related topics, regulatory advisor to the Public Service Commissioners on telecommunications and energy issues, familiar with telecommunications issues, statutes, and providers, and has developed relationships with both Qwest, which provides telecommunications services to 90 percent of Utah's population, and the rural telecommunications companies. While working for an energy consultant company, he managed a DOE Integrated Resource Program grant the final product of which was a document entitled, "The Restructuring of the Electric Utility Industry: A policy Guidebook for Regulators."

Carol Revelt, Utility Technical Consultant: Over 25 years experience in the energy industry. She has been employed by the Commission for the last 3.5 years as a regulatory advisor. Is familiar with state purchasing policies and procedures through the issuance of utility-related RFPs and contracts, and is experienced with federal reporting requirements through natural gas pipeline annual and semi-annual reporting to the U.S. Department of Transportation while serving in the capacity of Pipeline Safety Manager.

Julie Orchard, Commission Executive Secretary and Administrator: Over 25 years of experience in state government in the Governor's Office, the Department of Commerce, and, for the last 14 years, at the Public Service Commission. Her duties include Commission budget preparation and management, financial auditing, management of human resources, information technology, and annual report functions of the Commission, management of Commission records and dissemination of Commission communications. She is also responsible for all state-required reporting at the Commission.

Utah Department of Technology Services: Utah recognizes the important role that technology plays in all aspects of state government. DTS is the Technology Service Provider for the Executive Branch of the State of Utah. The Agency provides a broad range of services for government agencies throughout Utah. The Department has worked closely with the agencies it supports to guarantee that digital services available within government and to citizens directly, continue to improve each year. New search capabilities, developed through an innovative partnership with Google, help citizens access the information they need as quickly as possible. With so many citizens and businesses accessing State data and information DTS has found it crucial to increase the emphasis on information security. This will ensure that risks are appropriately managed and that the State can continue to enjoy the trust of its citizens in the way sensitive data is managed. Not only must these systems remain secure, but they must also be hardened in a way that they will be able to operate in many different scenarios.

Utah has also received First Place Best of the Web—State Portal Category Best of the Web is an annual awards program that recognizes the most innovative, user-friendly state and local government portals. The program is sponsored by the Center for Digital Government and is the most popular government Web site competition.

Network Planning Group of DTS: Network Planning is responsible for maintaining the State's wide area network. Network Planning has developed on-going relationships with its end-use clients including state and local governments, educational institutions, and public safety departments.

Boyd Webb, a strategic network planner for the DTS Network Planning Division, has been assigned to lead the planning project effort covered by this grant. He is the ESF#2 coordinator for the Utah Division of Homeland Security; and Telecommunications Manager for the State Emergency Communications Center (ECC). Mr. Webb has worked directly with senior-level DTS management and agency administrators in the development of a statewide communications interoperability plan, the adoption of technical and operational standards and has developed telecommunications project guidance and best practices. He has also directed and advised Project Teams and played a key role in preparing a successful $10 million federal grant proposal

to provide telecommunications interoperability for federal, state, tribal, and local government entities. He prepares and communicates financial, environmental, and technical project reporting for senior level management in a diverse public safety community.

Automated Geographic Reference Center: In Utah, the notion of a central statewide digital geographic information database has been around for nearly 30 years. The AGRC was established in 1981 with the mission to "encourage and facilitate the effective use of geospatial information technology for Utah." For 25 years, much of AGRC's focus has been on data acquisition, integration, documentation and distribution. For about 20 of those years, this activity has been closely tied to working with our many other state, local, federal, tribal government and university, non-profit and private partners.

Currently, the State has significant geospatial data and technical resources that are managed by the AGRC which serves as a State's enterprise-wide focal point for geospatial activities. The AGRC's 16 professional staff members collectively have over 200 years of experience in geospatial information systems. AGRC has built a robust, scalable geospatial infrastructure that supports central geospatial applications and web data & map services for Utah. The infrastructure includes a publicly accessible State Geographic Information Database (SGID) maintained in an SDE database. As part of the SGID, AGRC hosts aerial photography and other image-based serves available to applications using ESRI's ImageServer client. The geospatial server environment support web applications and processes that integrate a broad variety of data to support agency business processes within state and local government. All non-protected mapping datasets are accessible through the Utah's GIS Portal website, http://www.gis.utah.gov.

AGRC Experience and Expertise

Data

- Developed and maintains the data clearinghouse, the SGID which has over 400 statewide data layers. http://gis.utah.gov/SGID
- Developed and enhancing the attributes and improving the accuracy of the road and centerline data for statewide streets and roads in Utah.
- Developed and maintains the E911 address data. The current stated goal for this data is that accurate geographic locations can be derived from the datasets road geometry and addressing attributes for at least 95% of valid Utah addresses statewide.
- Developing and maintaining Cadastral/Base Reference Data in coordination with the Bureau of Land Management in improving the Public Land Survey system which serves as the foundation for land ownership in Utah.
- Developing and maintaining a statewide parcel database with parcel addresses that will be used for this project for accurately aligning customer addresses with parcel addresses. The land ownership patterns will provide an important context on broadband availability across Utah because of the large areas of federal lands.
- Experienced in using the EPA exchange network for data transfer and sharing.

Technical Infrastructure

- Maintain Utah's Enterprise Geospatial Infrastructure which includes the application servers, database servers, GPS RTK Network servers and the geospatial application and database software, and desktop GIS software.

Staff Expertise

- Advanced level expertise in using and programming with GIS software
- Web service and interactive map service development expertise
- Geospatial web application programming expertise

Examples: Geospatial web and map services gateway - http://mapserv.utah.gov/
DEQ Interactive map - http://dagrc.utah.gov/DEQ/
Department of Natural Resources, multi-user spatial editing and mapping application for large area watershed restoration projects – http://wri.utah.gov

Project Management

- EPA Network Exchange project for the Utah Department of Environmental Quality (DEQ), the results of this project became a national model for managing the DEQ data for the Underground Injection Program and submitting the data to EPA using EPA Exchange Network.
- Statewide high resolution imagery acquisition project involving 64 partners and 3 vendors with a project cost of $4 million.
- Geospatial web application development projects for state agencies.
- Large geospatial data development projects for state agencies including Utah Department of Transportation, Historic Preservation and Archeology, and the State Tax Commission.

Key AGRC Staff:

- Jeannie Watanabe, Manager AGRC – 20 years information technology, GIS and project management
- Matt Peters -16 years GIS experience; specializing in server-based GIS technologies
- Bert Granberg -13 years of GIS experience; specializing in GIS programming, custom geospatial database design, analysis, and automation
- Sean Fernandez -11 years experience in surveying and GIS, a licensed land surveyor

3. Expedient Data Delivery – Project Timeline

Utah proposes the following schedule, which attempts the balance the development of a realistic set of milestone dates with the expediency interests of the federal government rooted in both the critical nature of broadband availability and the economic stimulus funding mechanism. This schedule is based on a number of critical assumptions and may require refinement in response to significant departures from these assumptions. It is assumed:

- The State will receive formal notification of award no later than September 21, 2009 funded as proposed in the grant application.
- The responses to the State's RFP fall within the proposed budget in the grant application and meet the requirements of the RFP.
- The broadband providers agree to NDA's and willingly provide the requested data.
- Broadband providers are able to provide the data in the format requested or in a format that the contractor can transform to meet the NTIA requirements within the timelines developed by the Project Team and the contractor.

Date	Action
August 24, 2009	Issue Request for Proposal for data acquisition, data verification, and development of NDAs with broadband service providers.
September 11, 2009	Response to RFP due
September 28, 2009	Finalize selection of contractor(s) (assuming receipt of grant)
October 30, 2009	NDA's in place with providers
November 30, 2009	Receipt of data from major providers in Utah
December 30, 2009	Receipt of data from remaining providers in Utah
February 1, 2010	Delivery of Substantially Complete data to NTIA (70% of providers, 80% of households, 90% of rural households, 95% of community anchor institutions.)
February 1, 2010	Delivery of Community Anchor Institutions data to NTIA
March 30, 2010	Rollout of state broadband web portal with interactive mapping
September 1, 2010	Delivery of data to NTIA to complete statewide coverage
February 1, 2011 and on-going through 2014	Semi-annual update of data to NTIA; February 1 and August 1 of each year through 2014

Members of the Project Team are currently preparing the RFP for data collection and will expeditiously hire a contractor as soon as grant awarding procedures are complete. The State will not be able to retain any contractors associated with this project until the grant has been awarded.

Utah's semi-annual data submissions to the NTIA will include address-level facilities-based broadband availability records, wireless broadband service areas, middle and last mile connection points, average revenue per user data, and community anchor institution broadband data according to the specifications of the NOFA Technical Appendix. Utah will also be willing to share its state-level aggregated broadband data provided that the NTIA is able to develop a standard for the submission of such data.

Utah Broadband Mapping, Analysis, and Planning Project Organizational Chart